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09/910,206	07/20/2001	Michael Beuten	10191/1873	2708

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EXAMINER	
RAMPURIA, SATISH	

ART UNIT	PAPER NUMBER
2124	

DATE MAILED: 11/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/910,206	BEUTEN ET AL.	
	Examiner	Art Unit	
	Satish S. Rampuria	2124	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 July 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Amendment

1. This action is in response to the amendment received on 7/29/2004.
2. The rejections under 35 U.S.C. 112 second paragraph to claim 5 is withdrawn in view of applicant's amendment.
3. The objection to drawing (Fig. 1) is withdrawn in view of applicant's amendment.
4. Claims 1, 10, and 13 are amended.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 1 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims are non-statutory because they recite components for monitoring an execution of a program, representing functional descriptive material without a computer readable medium or computer implemented, program per se are not tangibly embodied. Claims 1-9 thus amounts to only abstract idea and are nonstatutory.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-4, 7, 8, 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art in view of US Patent No. 6502209 to Bengtsson et al., hereinafter called Bengtsson and further in view of US Patent No. 6,412,071 Hollander et al., hereinafter called Hollander.

Per claims 1, 2, 3, 10, 13, and 14:

Admitted prior art discloses:

- A method for monitoring an execution of a program that is executable on at least one microprocessor of a micro controller using a debug logic of the micro controller (Applicant's specification, page 2, lines 12-15 "The debug logic is used during the development of the program that is executable on the at least one microprocessor of the micro controller and is used for improvement of the visibility of the processes running in the micro controller")

- causing the debug logic to trigger an exception upon access to a specific address range during a program execution time (Applicant's specification, page 3, lines 1-2 "The debug logic can, as a rule, trigger an exception, e.g., an interrupt" and Applicant's specification, page 2, line 18 "The debug logic can learn from the address bus which selected address range was accessed")

- causing the debug logic to execute an exception routine after the exception is triggered during the program execution time (Applicant's specification, page 3, lines 23-25 "When access to one of these addresses is attempted, an exception is triggered and an exception routine is executed")

Admitted prior art does not explicitly disclose causing the at least one microprocessor to configure the debug logic.

However, Bengtsson discloses in an analogous computer system the debug chip is configured in DUT (device under test) (col. 4, lines 37-38 "debug chip 110C configured in DUT").

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of configuring the microprocessor or DUT to debug logic as taught by Bengtsson in to the method of monitoring the program as taught in admitted prior art. The modification would be obvious because of one of ordinary skill in the art would be motivated configure the prior art microprocessor with debug logic to eliminate the excessive costs of the producing a special version chip for debugging purposes as suggested by Bengtsson (col. 2, lines 24-30).

Neither admitted prior art nor Bengtsson disclose the access to the specific address range includes illegal access to a storage area.

However, Hollander discloses in an analogous computer system access to the specific address range includes illegal access to a storage area (col. 2, lines 62-67 "... receiving a caller routine return address... memory device... determining whether the caller routine address is valid by comparing the caller routing address with an associated process stack address area").

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method to access to the specific address range includes illegal access to a storage area as taught by Hollander in to the method of monitoring the program as taught in combination system by admitted prior art and Bengtsson. The

modification would be obvious because of one of ordinary skill in the art would be motivated to access the illegal access to a storage area to detect and prevent unauthorized illegal access within a computer system as taught by Hollander (col. 2, lines 1-21).

Per claim 4:

The rejection of claim 1 is incorporated, and further, admitted prior art does not explicitly disclose resetting the micro controller, starting up the micro controller again, and initializing the program.

However, Bengtsson discloses in an analogous computer system the power-on-reset unit coupled to the debug bus (col. 4, lines 21-24 "debug bus 140 is coupled to all chips... power-on-reset interrupts... other asynchronous events"). It is obvious to use the power-on-reset to reset microconroller and/or initialize the program.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the power-on-reset as taught by Bengtsson in to the method of monitoring the program as taught in admitted prior art. The modification would be obvious because of one of ordinary skill in the art would be motivated reset the microcontroller or DUT to make the new changes in effect.

Per claim 7 and 8:

The rejection of claim 1 is incorporated, and further, admitted prior art discloses:

- ***the debug logic monitors whether the program accesses a preselectable address range of a memory during the program execution time*** (Applicant's specification, page 2, lines 18-21 "The

debug logic can learn from the address bus which selected address range was accessed, from the data bus, which data is to be written into the selected address range or was read out of the selected address range, and, from the control bus, whether a write or read access is to be performed on the selected address range")

Per claim 11:

The rejection of claim 10 is incorporated, and further, admitted prior art discloses:

- the control element corresponds to one of a read-only memory and a flash memory

(Applicant's specification, page 2, lines 3-4 "internal control elements (e.g., a read-only memory or a flash memory), and/or further components")

Per claim 12:

The rejection of claim 10 is incorporated, and further, admitted prior art discloses:

- the micro controller is arranged in a motor vehicle (Applicant's specification, page 2, lines 4-5 "This type of micro controller is, for example, part of a controller for a motor vehicle")

9. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art, Bengtsson in view of US Patent No. 6,697,972 to Oshima et al., hereinafter called Oshima.

Per claims 5 and 6:

Neither admitted prior art nor Bengtsson discloses storing a fault in the memory and storing memory address.

However, Oshima discloses in an analogous computer system storing a fault in the memory and storing memory address (col. 5, lines 1-6 "OS fault detection time 13 and an OS fault recovery method 14 are stored with regard to a monitored subject ID 18 (address), and AP monitor fault detection time 15 and an AP monitor fault recovery method 16 are stored with regard to a monitored subject ID 20").

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate storing a fault in the memory and storing memory address as taught by Oshima in corresponding to the combination system for monitoring the program as taught by admitted prior art and Bengtsson. The modification would be obvious because of one of ordinary skill in the art would be motivated to store fault type and memory address in the memory to start monitoring debugging where it left off as suggested by Oshima (col. 1, lines 40-46).

10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art, Bengtsson in view of US Patent No. 6,535,811 to Rowland et al., hereinafter called Rowland.

Per claim 9:

Neither admitted prior art nor Bengtsson discloses a code sequence of the program, swapped out from a flash memory of the micro controller into a random access memory of the micro controller, in the flash memory.

However, Rowland discloses in an analogous computer system a code sequence of the program, swapped out from a flash memory of the micro controller into a random access memory of the micro controller, in the flash memory (col. 5, lines 23-25 "memory holding the executable code, typically some type of ROM, had to be swapped with a memory having the new executable code "burned in."" and col. 5, lines 27-29 "flash memory 22 comprises a flash EPROM. Thus, executable code for the microcontroller can be rewritten as necessary").

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of swapping the code between memories as taught by Rowland into the method of monitoring the program as taught by the combination system of admitted prior art and Bengtsson. The modification would be obvious because of one of ordinary skill in the art would be motivated to swap the code between flash and RAM memories to read write the data control relationship during engine operation as suggested by (col. 2, lines 5-9).

Response to Arguments

11. Applicant's arguments with respect to claims 1, 10, and 13 have been considered but they are not persuasive.

In the remarks, the applicant has argued that:

- Office action offers no evidence whatsoever, but only conclusory hindsight, reconstruction and speculation that will support a proper obviousness finding.
- Office action does not show the access to the specific address range includes illegal access to a storage area.

Examiner's response:

- In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). It is noted that the rejection clearly points out where the combination of admitted prior art, Bengtsson, and Hollander (see the rejection above) teach the claimed features and why it would have been obvious to combine their teachings. Specifically, the rejection points out that the motivation to access the specific address range includes illegal access to a storage area would be to provide the advantage of identifying unauthorized or illegal access attempts to software objects within a computer system, and to reset the microcontroller to have the new changes in effect is well known in the computer art that to have the new changes in effect one in the ordinary skill in the art would initialize the device by resetting the power ON/OFF. Applicant only makes general allegations of improper hindsight reasoning and does not point out any errors in the rejection. Therefore, the rejection is proper and maintained herein.
- Applicant's arguments with respect to the access to the specific address range includes illegal access to a storage area as cited in claims 1, 10, and 13 have been considered but are moot in view of new ground(s) of rejection.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Satish S. Rampuria
Patent Examiner
Art Unit 2124
11/29/2004

ANIL KHATRI
PRIMARY EXAMINER